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Implicitly and Explicitly Assessed Relationship Satisfaction

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To the Graduate Council:

I am submitting herewith a thesis written by Matthew Jason Shaffer entitled "Implicitly and Explicitly Assessed Relationship Satisfaction." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

James K. McNulty, Major Professor

We have read this thesis and recommend its acceptance:

Lowell Gaertner, Michael Olson

Accepted for the Council:
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Vice Provost and Dean of the Graduate School

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Implicitly and Explicitly Assessed Relationship Satisfaction

A Thesis

Presented for the

Master of Arts Degree

The University of Tennessee, Knoxville

Matthew Jason Shaffer

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Abstract

This study investigates the relationship between implicitly assessed (i.e., unexpressed, sometimes unconscious, "gut-level") attitudes and explicitly assessed attitudes in romantic couples. 135 newlywed couples were examined in a laboratory session. A series of Hierarchical Linear Models were run to assess whether implicitly assessed attitudes predict the use of demand-withdraw behaviors in conflict discussion tasks. Results indicate that, for demand behaviors, there is a 3-way interaction between implicitly assessed attitudes, participant sex, and partner behavior during the discussion task. Implicitly assessed attitudes did not predict withdraw behaviors. Theoretical implications for both implicitly assessed attitudes research and romantic relationships research are discussed.

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Introduction

Implicitly Assessed Attitudes and Romantic Relationships

Most contemporary understandings of romantic relationships operationalize relationship satisfaction as an explicitly assessed, self-reported perception of one's own relationship and/or relationship partner (Karney & Bradbury, 1995). However, many of the cognitive strategies that people use to maintain their important beliefs emerge because they are motivated to hold those beliefs (Kunda, 1990). Indeed, spouses are highly motivated to see their relationships in a positive light (Martz, et al., 1998) and over short periods of time are able to remain satisfied despite negative specific experiences with the relationship (McNulty & Karney, 2001). Accordingly, researchers have started to investigate implicitly assessed (i.e., unexpressed, sometimes unconscious, "gut-level") attitudes in the realm of romantic relationships (Fincham, Garnier, Gano-Phillips, & Osborne, 1995; Zayas & Shoda, 2005; Banse & Kowalick, 2007; Dewitt, de Houwer, & Buysse, 2008; Murray, Holmes, Pinkus, 2010).

Several recent studies have demonstrated the importance of implicitly assessed attitudes to relationship outcomes (Scinta & Gable, 2007; Lebel & Campbell, 2009; Lee, Rogge, & Reis, 2010; Lee, 2011). Implicitly assessed attitudes held towards one's partner are positively related to explicitly assessed relationship satisfaction (Scinta & Gable, 2007; Lebel & Campbell, 2009; Lee, 2011) as well as perceptions of relationships stability (Scinta & Gable, 2007). Implicitly assessed attitudes held towards one's partner are negatively related to relationship dissolution, over time (Lebel & Campbell, 2009; Lee, Rogge, & Reis, 2010), even when controlling for common predictors of relationship dissolution, such as negative conflict and neuroticism. Furthermore, Lee (2011) demonstrated that implicitly assessed attitudes held towards one's

partner are negatively related to specific negative behaviors demonstrated in conflict-discussion tasks.

The Demand-Withdraw Pattern of Marital Conflict and the MODE Model

Implicitly assessed attitudes may also be useful for explaining behavior patterns that are common in conflict discussions. One of the most-frequently researched patterns of conflict behavior between marital partners is the Demand-Withdraw pattern (Christensen & Heavey, 1990). The demander pressures their partner (blames the partner for the problems in the relationship, prescribes behavior in which the partner may engage to resolve the problem, etc.), and the withdrawer retreats from the conflict (avoids the partner nonverbally, becomes passively inactive in the discussion, etc.; Christensen & Heavey, 1990). A fairly robust body of research demonstrates that women are more likely to demand and men are more likely to withdraw (Jacobsen, 1983; Christensen & Heavey, 1990; Caughlin & Vangelisti, 2000), and one partner engaging in either strong demand or strong withdraw behaviors generally signals the other partner to engage in the opposing behavior (Christensen & Heavey, 1990). Typically, unsatisfied couples display this pattern in conflict behavior tasks, and engaging in this pattern repeatedly over time has been shown to predict marital dissatisfaction and marital instability (Caughlin & Vangelisti, 2000).

Fazio's (1990) Motivation and Opportunity as Determinants of Attitude-Behavior Relationship (MODE) model provides a strong conceptual framework for why this may be true. The MODE Model is a model of attitude-to-behavior processes which distinguishes between two processes: spontaneous and deliberate. Spontaneous processes are "reactions of one's perception to the immediate situation," whereas deliberate processes involve the "exertion of effort for the purpose of reaching…a given conclusion" (Olson & Fazio, 2009). This model suggests that

spontaneous processes drive behavior unless there is both motivation and opportunity to control behavior through deliberate processes. Motivation may be something as fundamental as the desire for accuracy (Olson & Fazio, 2009), but in the context of romantic relationships it may include the desire to see one's relationship or relationship partner in a positive light or the desire to present one's relationship or relationship partner in a positive light to others (Martz, et al., 1998). Opportunity may be something as fundamental as having time to consider information (Olson & Fazio, 2009). As such, motivation and opportunity are subject to limited cognitive resources, and fatigue, distraction, and other interference that may limit the ability to use deliberate processes frequently and effectively (Olson & Fazio, 2009). This theoretical framework is designed to explain racial prejudice; the model suggests that spontaneous processes, such as implicitly assessed attitudes, drive behavior unless there is both motivation and opportunity to control behavior through deliberate processes.

The same processes should hold for attitudes towards romantic relationships and relationship partners. For this study, I have operationalized motivation with an explicit measure of marital satisfaction, the Quality of Marriage Index (Norton, 1983). This measure should track motivation to control one's attitudes towards their relationship and relationship partner because it explicitly asks participants to describe such attitudes, which, as discussed, are highly influenced by motivational processes. Those that report higher levels of satisfaction with their relationship and relationship partner should have more motivation to control their attitudes towards their relationship and relationship partner, while those that report lower levels of satisfaction with their relationship and relationship partner should have less motivation to control their attitudes towards their relationship and relationship partner. I have operationalized opportunity with an explicit measure of marital problems, the Marital Problems Inventory (Geiss & O'Leary, 1981).

This measure should track opportunity to control one's attitudes towards their relationship and relationship partner because it explicitly asks participants to describe the extent to which they feel various marital problems are a source of disagreement in their relationship, which should reflect the reality of their relationship. Those that report that they experience little disagreement in their relationship should have more opportunity to control their attitudes towards their relationship and relationship partner, while those that report many troubling problems in their relationship should have little opportunity to control their attitudes towards their relationship and relationship partner. Clearly, these operationalizations cannot unambiguously distinguish motivation from reality nor real problems from motivation. As such, I am making a strong, yet plausible assumption that the QMI serves as a measure of motivation and the MPI serves as a measure of opportunity.

With this assumption in mind, it follows that, controlling for the documented sex-difference and the effect of one partner's behavior on their spouse, those that are not motivated (report low levels of satisfaction) and lack opportunity (report high levels of marital problems) to see their relationship in a positive light may behave in a way that is consistent with their implicitly assessed attitudes towards their partner. In this case, members of a couple who have highly favorable implicitly assessed attitudes towards their partner may refrain from engaging in demand (for wives) and withdraw (for husbands), but those that have unfavorable implicitly assessed attitudes towards their partner should engage in the pattern of demanding and withdrawing behaviors (i.e. wife demand/husband withdraw)

Current Study

Specifically, I predict that implicitly assessed attitudes are negatively related to specific, negative behaviors engaged in during conflict discussion tasks. However, based on the MODE model and our understanding of the Demand-Withdraw pattern of marital conflict, I predict a 5-way interaction between implicitly assessed attitudes, motivation to see one's relationship in a positive light (explicitly assessed attitudes), opportunity (explicitly assessed marital conflict), one's partner's display of the opposite behavior, and sex. For those that have positive explicitly assessed attitudes towards their partner and report a lack of marital problems, implicitly assessed attitudes should not predict behaviors consistent with the Demand-Withdraw pattern of marital conflict, as they have both the motivation and the opportunity to control their behaviors. However, for those that either have negative explicitly assessed attitudes towards their partner or report high levels of marital problems, implicitly assessed attitudes held about their partner should predict the Demand-Withdraw pattern of behavior, as they lack either the motivation or opportunity (or both motivation and opportunity) to control their behaviors. For these couples, those with positive implicitly assessed attitudes towards their partner should display fewer behaviors consistent with the Demand-Withdraw pattern of marital conflict than those with negative implicitly assessed attitudes towards their partner.

Method

Participants

Participants in the study were 135 newlywed couples recruited from Eastern Tennessee. Couples were recruited using two methods. The first was to place advertisements in community newspapers and bridal shops offering payment to couples willing to participate in a longitudinal study of newlyweds. The second was to send invitations to eligible couples who had completed

marriage license applications in counties near study locations. All couples responding to either solicitation were screened for eligibility in an initial telephone interview. Inclusion required that: (a) this was the first marriage for each partner, (b) the couple had been married less than 6 months, (c) each partner was at least 18 years of age, (d) each partner spoke English and completed at least 10 years of education (to ensure comprehension of the questionnaires), (e) couples did not already have children (to allow a similar probability of transitioning to first parenthood for all couples), and (f) wives were not older than 35 (again, to allow a similar probability of transitioning to first parenthood for all couples). Eligible couples were scheduled to attend an initial laboratory session and mailed a packet of survey measures.

Demographic summaries of the participants are presented in Table 1. On average, participants were in their mid-twenties, with husbands being slightly older than wives. On average, participants reported relatively high levels of education. A large proportion of participants was employed full-time at the beginning of the study, whereas a minority of participants was in school full time. The median income, combined across spouses, was between 30K and 40K. The majority of participants were Caucasian (> 90%).

Procedure

Before their laboratory session, participants were mailed a packet of questionnaires to complete at home and bring with them to their appointment. This packet included a consent form approved by the local human subjects review board, self-report measures of marital satisfaction and of marital problems, and a letter instructing couples to complete all questionnaires independently of one another and to bring their completed questionnaires to their upcoming laboratory session. Upon arriving to that session, each spouse completed the Evaluative Priming task (described below). After completing the task, each spouse identified an area of difficulty in

the marriage and then both spouses participated in two, 10-minute, videotaped discussions in which they were left alone to "work towards some resolution or agreement" for each area of difficulty. The order of the two interactions was determined through a coin flip. If both spouses chose the same topic, they first discussed that topic and then discussed a second topic chosen by the spouse whose topic was designated to be discussed second. After completing their interactions, couples were paid $80 for participating in this phase of each study.

Measures

Evaluative Priming Task

Photographs were taken of each spouse, with 8 photographs taken, in total (4 of each spouse). All photographs were set against a plain white wall background. A variety of positions were used to provide different perspectives of each spouse. One photograph was set from the participant's bust to head, standing and facing directly towards the camera (face). The second photograph was set from the participant's bust to head, with the participant standing and facing to their left (profile). The third photograph was shot wider, displaying the participant standing and displaying all from the knees to the head and including the entire width of the participant (wide). The fourth photograph was shot wide, as well, with the participant seated in a chair instead of standing (seated). After the photographs were taken, the images were loaded into the computer to be used in the Evaluative Priming task. Photographs of other people were already stored on each computer. These photographs were kept constant throughout the study and display people that did not participate in the study. Photographs of others were also taken in the four different positions (face, profile, wide, and seated).

Participants were introduced to priming measures as a test of word meaning identification. Participants were told to respond to the valence of words with positive (e.g., love)

and negative (e.g., hate) connotations as quickly as possible by pressing one of two keys labeled "good" and "bad" on the keyboard ("Z" and "/" respectively). Before they saw each word, though, a photo of themselves, their partners, or another person was presented supraliminally (for 300 milliseconds). Participants' latency to respond to the adjectives was recorded. If the participant had a positive attitude toward the object that was presented before the adjective, the object should implicitly activate positive emotions. If positivity is activated, participants should respond more quickly to the valence of positive adjectives than negative adjectives. Similarly, participants should also respond more quickly on trials where the object that appeared before a negative adjective itself triggers a negative evaluation. Thus, participants with positive attitudes toward their partners should have more quickly identified positive words and more slowly identify negative words after seeing a picture of their partners and participants with less positive attitudes toward their partners should have more slowly identified positive words and more quickly identify negative words after seeing a picture of their partners. Likewise, participants with positive attitudes toward themselves should have more quickly identified positive words and more slowly identified negative words after seeing a picture of themselves and participants with less positive attitudes toward themselves should have more slowly identified positive words and more quickly identified negative words after seeing a picture of themselves. The orientation of the person in the photograph (face, profile, wide, or seated) and the type of person in the photograph (self, spouse, or other) both randomly varied across trials. Participants completed 128 trials and scores were averaged across all of them. The entire task took between 5 and 10 minutes. 8 participants were removed from analyses due to high error rates in the Evaluative Priming Task (greater than 20% error rate across all trials).

Observed Behavior

Prior research has tended to code the content of partners' verbal expressions during problem-solving interactions using one of four coding systems: the Marital Interaction Coding System (MICS; Heyman, Eddy, Weiss, & Vivian, 1995), the Couples Interaction Scoring System (CISS; Gottman, 1979), the Kategoriensystem für Partnerschftliche Interaktion (KPI; Hahlweg, Markman, Thurmaier, Engl, & Eckert, 1998), and the *Verbal Tactics Coding Scheme* (VTCS; Sillars, Coletti, Parry, & Rogers, 1982). Notably, these systems show remarkable consistency in terms of the negative behaviors they identify (e.g., blaming the partner, rejecting the partner, commanding the partner, avoiding responsibility, insinuations). We used a modified version of the CISS (Gottman, 1979).

Four coders globally rated the interactions to determine the extent to which each spouse exhibited behavior on a scale from 1 = "Not at all" to 7 = "Extremely/A lot." Approximately 20% of the discussions were coded by a second rater. A speaker received a Blaming code for directly criticizing the partners for past, current, or future behaviors (e.g., "You never listen to me."), or directly pointed out any ongoing role played by the partner in a past, current, or future problem (e.g., "This is your fault."). A speaker received a Prescribing (often referred to as "commanding") code for speaking turns that directly instructed the partner to engage in behaviors to resolve the problem (e.g., "Don't do that anymore."). A speaker received a Withdrawing code for physically disengaging from the conversation (e.g., leaning back and turning one's head away from one's partner while the partner is speaking). A speaker received an Avoiding code for verbally disengaging from the conversation (e.g., sighing and expressing a disinterested tone of voice).

Because my hypothesis involves a pattern of relationship conflict and not the individual behaviors that were coded, we averaged blaming and prescribing together to form a Demand code (the correlation between blaming and prescribing was r = .9) and averaged withdrawing and avoiding together to form a Withdraw code (the correlation between withdrawing and avoiding was r = .66). Given my hypotheses do not distinguish between husbands' and wives' topics, but rather are best tested using the behavior exchanged during these discussions as a proxy for the spouses' tendencies toward exchanging behaviors during problem-solving discussions generally, and the fact that the wife demand/husband withdraw pattern has been demonstrated even when both partners desire change in the other, I collapsed across the two conversations to form an index of the average tendency for each spouse to exhibit each behavior across both conversations (The correlation between demand exhibited across the two discussions was r = .4 for men and r = .49 for women. The correlation between withdraw exhibited across the two discussions was r = .24 for men and r = .17 for women). Two couples refused to be recorded and both conversations from a third couple were damaged. I compared the scores of these 3 couples to the remaining sample using an eyeball comparison, and I determined that the couples for whom behavioral data were available did not differ from those for whom behavioral data were not available on any of the variables of interest. Intraclass correlation coefficients (ICCs) indicated that our system was reliable (for husbands, Demand ICC = .74, Withdraw ICC = .62; for wives, Demand ICC = .81, Withdraw ICC = .61).

Self-Report Measures

135 newlywed couples completed these measures. These measures are explicitly assessed and are a variety of well-validated self-report measures of relationship satisfaction and negative

relationship experiences, most notably Norton's Qualities of Marriage Index (QMI; 1983) and the Marital Problems Inventory (Geiss & O'Leary, 1981).

The Quality Marriage Index explicitly measures relationship satisfaction that I used as a proxy for motivation to control one's attitudes about their relationship and relationship partner. It asks participants rate the extent to which they agree with a number of statements (e.g. "My relationship with my partner is very stable," "My relationship with my partner makes me happy") on a scale from 1 = "Very Strong Disagreement" to 7 = "Very Strong Agreement." In equations 3 and 4, the Qualities of Marriage Index serves as a proxy for one's motivation and opportunity to control one's responses concerning their relationship and their relationship partner. Internal consistency was adequate (α was at least .85 for husbands and wives at every wave of measurement).

The Marital Problems Inventory is an explicit measure that I used as a proxy for opportunity to control one's attitudes towards their relationship and relationship partner. It asks participants to rate the extent to which a number of common marital problems (e.g. Children, Money Management, In-Laws/Parents/Relatives) are a source of difficulty or disagreement for their relationship with their spouse. Participants rate the extent to which each item is a source of difficulty or disagreement on a scale from 1 = "Not a Problem" to 11 = "Major Problem."

Results

Descriptive Statistics and Preliminary Results

Descriptive statistics for all independent variables are reported in Table 2. As would be expected within a sample of newlywed couples, on average husbands and wives had very high levels of explicit relationship satisfaction. Overall, wives and husbands both had slightly higher latencies to negative words positive words following a photograph of their partner, which

indicates that both wives and husbands had relatively positive implicitly assessed attitudes towards their spouses, and is reflected as a score greater than zero. Not surprisingly, most couples reported relatively low levels of marital problems, and observers noted relatively low amounts of demand and withdraw behaviors exhibited in conflict discussion tasks between spouses.

Correlations among the independent variables are reported in Table 3, with husbands scores reported below the diagonal and wives scores reported above the diagonal. QMI was moderately negatively correlated with MPI. QMI was not related to implicitly assessed attitudes for both men and women, which suggests that these two measures are not directly related. Demand was both positively related to withdraw and negatively related to QMI for wives, but neither of these relationships was found for husbands. Neither demand nor withdraw were associated with implicitly assessed attitudes for both wives and husbands. Husbands and wives scores were positively correlated for all variables except implicitly assessed attitudes, which is why I will need to use statistical methods that can account for the non-independence of individuals' scores.

Describing Conflict Discussion Task Behavior

Mixed linear modeling (e.g., Bryk & Raudenbush, 1987) was used to estimate demand behaviors during a conflict discussion. Specifically, I regressed demand behavior on implicitly assessed attitudes held towards one's partner, explicitly assessed attitudes held towards one's partner (motivation), explicitly assessed marital problems (opportunity), the amount of withdraw behavior engaged in by each participant's partner, and participant sex. The following equation was estimated in the first level of a 2-level model:

[Equation 1]

Level 1

Y_{ij} (Demand Behavior) = $B0_{ij}$(Intercept) + $B1_{ij}$(QMI) + $B2_{ij}$(Imp. Attitudes) + $B3_{ij}$(Sex) + $B4_{ij}$(MPI) + $B5_{ij}$(Partner Withdraw) + $B6_{ij}$(QMIxImp. Attitudes) + $B7_{ij}$(QMIxSex) + $B8_{ij}$(QMIxMPI) + $B9_{ij}$(QMIxPartner Withdraw) + $B10_{ij}$(Imp. AttitudesxSex) + $B11_{ij}$(Imp. AttitudesxMPI) + $B12_{ij}$ (Imp. AttitudesxPartner Withdraw) + $B13_{ij}$(SexxMPI) + $B14_{ij}$(SexxPartner Withdraw) + $B15_{ij}$(MPIxPartner Withdraw) + $B16_{ij}$(QMIxImp. AttitudesxSex) + $B17_{ij}$(QMIxImp. AttitudesxMPI) + $B18_{ij}$(QMIxImp. AttitudesxPartner Withdraw) + $B19_{ij}$(QMIxSexxMPI) + $B20_{ij}$(QMIxSexxPartner Withdraw) + $B21_{ij}$(QMIxMPIxPartner Withdraw) + $B22_{ij}$ (Imp. AttitudesxSexxMPI) + $B23_{ij}$(Imp. AttitudesxSexxPartner Withdraw) + $B24_{ij}$(Imp. AttitudesxMPIxPartner Withdraw) + $B25_{ij}$(SexxMPIxPartner Withdraw) + $B26_{ij}$ (QMIxImp. AttitudesxSexxMPI) + $B27_{ij}$(QMIxImp. AttitudesxSexxPartner Withdraw) + $B28_{ij}$(QMIxImp. AttitudesxMPIxPartner Withdraw) + $B29_{ij}$(QMIxSexxMPIxPartner Withdraw) + $B30_{ij}$(Imp. AttitudesxSexxMPIxPartner Withdraw) + $B31_{ij}$(QMIxImp. AttitudesxSexxMPIxPartner Withdraw) + r_{ij}

where, Y_{ij} is the demand behavior of individual j; $B0_{ij}$ is the average demand behavior of individual j at the sample average QMI, implicitly assessed attitudes, MPI, partner withdraw, and 0 for dummy-coded sex (0 = male, 1 = female); $B1_{ij}$ is the relationship between QMI and demand behavior of individual j; $B2_{ij}$ is the relationship between implicitly assessed attitudes and demand behavior of individual j; $B3_{ij}$ is the relationship between dummy-coded sex and demand behavior (0=male, 1=female); $B4_{ij}$ is the relationship between MPI and demand behavior, $B5_{ij}$ is the relationship between partner withdraw and demand behavior, $B6_{ij}$ – $B15_{ij}$ represent the 2-way

interactions between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner withdraw for individual j; $B16_{ij}$ – $B25_{ij}$ represent the 3-way interactions between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner withdraw for individual j; $B26_{ij}$ – $B30_{ij}$ represent the 4-way interactions between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner withdraw for individual j; $B31_{ij}$ represents the 5-way interaction between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner withdraw for individual j; and r_{ij} is the residual variance in demand behavior for individual j, assumed to be independent and normally distributed across spouses. This model can be understood as a between-subjects regression of demand behavior onto QMI, implicitly assessed attitudes, dummy-coded sex, MPI, partner withdraw, and all interactions of those 5 variables, where the shared variance between husbands' and wives' data was controlled in a second level of the analysis.

Results indicated that there was a 3-way interaction between partner withdraw, implicitly assessed attitudes, and sex (B = -.00742, t(219) = -2.65, p = .01) (Table 4). For men, there is a 2-way interaction between partner withdraw and implicitly activated attitudes (B = -.00746, t(219) = -3.13, p = .002) (Figure 1) such that for those men with more positive implicitly assessed attitudes towards their partner, partner withdraw does not predict demand behavior (B = -.125, t(219) = -.4, p = .688), but for those men with more negative implicitly assessed attitudes towards their partner, partner withdraw does predict demand behavior (B = 1.141, t(219) = 4.53, p < .001). However, for women, there is no such interaction between partner withdraw and implicitly assessed attitudes (B = -.00004, t(219) = -.03, p = .977) (Figure 2). Spouse withdraw predicts demand behavior both for women with more positive (B = .647, t(219) = 4.18, p < .001) and more negative (B = .654, t(219) = 3.51, p = .001) implicitly assessed attitudes.

I conducted a post hoc investigation of the marginal 4-way interaction to determine if it tracked the predicted 5-way interaction. For women, spouse withdraw predicts demand behavior for those with more positive implicitly assessed attitudes and more negative explicitly assessed attitudes (B = .886, t(219) = 3.21, p = .002) and for those with more negative implicitly assessed attitudes and more positive explicitly assessed attitudes (B = .897, t(219) = 3.72, p < .001), but it was not related to demand behavior for those with both negative implicitly and explicitly assessed attitudes (B = .411, t(219) = 1.35, p = .179) or those with both positive implicitly and explicitly assessed attitudes (B = .406, t(219) = 1.30, p = .196). For men, spouse withdraw predicts demand behavior for those with both negative implicitly and explicitly assessed attitudes (B = 1.08, t(219) = 2.63, p = .01) and those with more negative implicitly assessed attitudes and more positive explicitly assessed attitudes (B = 1.20, t(219) = 2.55, p = .013), but it was not related to demand behavior for those with both positive implicitly and explicitly assessed attitudes (B = .825, t(219) = 1.53, p = .128) or those with more positive implicitly assessed attitudes and more negative explicitly assessed attitudes (B = -1.08, t(219) = -1.30, p = .197). Hence, the marginal 4-way interaction does not track the predicted but non-significant 5-way interaction. I then conducted another post hoc investigation of the marginal 4-way interaction between partner withdraw, implicitly assessed attitudes, sex, and QMI by testing this 4-way interaction in the absence of a 5-way interaction. The analysis revealed that the interaction was non-significant.

Mixed linear modeling (e.g., Bryk & Raudenbush, 1987) was used to estimate withdraw behaviors during a conflict discussion. Specifically, we regressed withdraw behavior on implicitly assessed attitudes held towards one's partner, explicitly assessed attitudes held towards one's partner (motivation), explicitly assessed marital problems (opportunity), the amount of

demand behavior engaged in by each participant's partner, and participant sex. The following equation was estimated in the first level of a 2-level model:

[Equation 2]

Level 1

Y_{ij} (Withdraw Behavior) = $B0_{ij}$(Intercept) + $B1_{ij}$(QMI) + $B2_{ij}$(Imp. Attitudes) + $B3_{ij}$(Sex) + $B4_{ij}$(MPI) + $B5_{ij}$(Partner Demand) + $B6_{ij}$(QMIxImp. Attitudes) + $B7_{ij}$(QMIxSex) + $B8_{ij}$(QMIxMPI) + $B9_{ij}$(QMIxPartner Demand) + $B10_{ij}$(Imp. AttitudesxSex) + $B11_{ij}$(Imp. AttitudesxMPI) + $B12_{ij}$ (Imp. AttitudesxPartner Demand) + $B13_{ij}$(SexxMPI) + $B14_{ij}$(SexxPartner Demand) + $B15_{ij}$(MPIxPartner Demand) + $B16_{ij}$(QMIxImp. AttitudesxSex) + $B17_{ij}$(QMIxImp. AttitudesxMPI) + $B18_{ij}$(QMIxImp. AttitudesxPartner Demand) + $B19_{ij}$(QMIxSexxMPI) + $B20_{ij}$(QMIxSexxPartner Demand) + $B21_{ij}$(QMIxMPIxPartner Demand) + $B22_{ij}$ (Imp. AttitudesxSexxMPI) + $B23_{ij}$(Imp. AttitudesxSexxPartner Demand) + $B24_{ij}$(Imp. AttitudesxMPIxPartner Demand) + $B25_{ij}$(SexxMPIxPartner Demand) + $B26_{ij}$ (QMIxImp. AttitudesxSexxMPI) + $B27_{ij}$(QMIxImp. AttitudesxSexxPartner Demand) + $B28_{ij}$(QMIxImp. AttitudesxMPIxPartner Demand) + $B29_{ij}$(QMIxSexxMPIxPartner Demand) + $B30_{ij}$(Imp. AttitudesxSexxMPIxPartner Demand) + $B31_{ij}$(QMIxImp. AttitudesxSexxMPIxPartner Demand) + r_{ij}

where, Y_{ij} is the withdraw behavior of individual j; $B0_{ij}$ is the average withdraw behavior of individual j at the sample average QMI, implicitly assessed attitudes, MPI, partner demand, and 0 for dummy-coded sex (0 = male, 1 = female); $B1_{ij}$ is the relationship between QMI and withdraw behavior of individual j; $B2_{ij}$ is the relationship between implicitly assessed attitudes and withdraw behavior of individual j; $B3_{ij}$ is the relationship between dummy-coded sex and

withdraw behavior (0=male, 1=female); $B4_{ij}$ is the relationship between MPI and withdraw behavior, $B5_{ij}$ is the relationship between partner demand and withdraw behavior, $B6_{ij} – B15_{ij}$ represent the 2-way interactions between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner demand for individual j; $B16_{ij} – B25_{ij}$ represent the 3-way interactions between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner demand for individual j; $B26_{ij} – B30_{ij}$ represent the 4-way interactions between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner demand for individual j; $B31_{ij}$ represents the 5-way interaction between QMI, implicitly assessed attitudes, dummy-coded sex, MPI, and partner demand for individual j; and r_{ij} is the residual variance in withdraw behavior for individual j, assumed to be independent and normally distributed across spouses. This model can be understood as a between-subjects regression of withdraw behavior onto QMI, implicitly assessed attitudes, dummy-coded sex, MPI, partner demand, and all interactions of those 5 variables, where the shared variance between husbands' and wives' data was controlled in a second level of the analysis. Results indicated that there was a main effect of sex ($B = .234$, $t(219) = 2.22$, $p = .03$) (Table 5), such that men withdraw more than women, and a main effect of partner demand ($B = .307$, $t(219) = 4.36$, $p < .001$), such that those whose partners engaged in more demand behaviors displayed more withdraw behaviors. No other main effects or higher order effects were found.

Discussion

The current research further demonstrates the role of implicitly assessed attitudes in marital relationships. In terms of the extant literature on romantic relationships, the relationship between implicitly assessed attitudes, partner behavior, and sex on demand behavior is quite interesting; men make demands of their partner when they have more negative implicitly

assessed attitudes towards their partner and their partner is withdrawing, but women make demands of their partner when their partner is withdrawing, regardless of their implicitly assessed attitudes. This relationship did not hold for withdraw behavior. The results indicate that the 3-way interaction between implicitly assessed attitudes, partner behavior, and sex were marginally significant, but the low reliability of withdraw behaviors may have contributed to this lack of finding.

This study has implications for both attitudes research and romantic relationships. Researchers have only recently begun to implicitly assess attitudes towards one's relationship and relationship partner, and this research suggests that assessing attitudes in the way may provide further insight into the negative patterns of behavior in which troubled couples frequently engage. Moreover, it appears that a better understanding of couples' attitudes towards their relationships and relationship partners may provide further evidence for the differentiation and interplay between implicitly and explicitly assessed attitudes.

I did not predict this relationship between the variables. Based on the MODE model, motivation (QMI) and opportunity (MPI) to see one's relationship in a positive light should have played a role in predicting both demand and withdraw behaviors. My study did not have direct measures of motivation and opportunity to control responses concerning one's relationship and one's relationship partner. I used the QMI as a proxy for motivation and the MPI as a proxy for opportunity, but future research should include scales specifically designed to measure these constructs within the discussion tasks.

The estimates in both equations were further impacted by the low reliability of demand and withdraw behaviors exhibited between discussions 1 and 2. I collapsed across discussion topics based on the theoretical basis of my predictions, but the low correlations suggest that there

is variance in the behaviors demonstrated in each conversation that was unique to that conversation. However, post-hoc investigation revealed that there were no order effects, and there was no effect of which spouse selected the first conversation.

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APPENDIX

Table 1

Sample Demographics

Spouse	Age	Years Education	Employed	Students	Income	Caucasian
	M(SD)	*M(SD)*	*%*	*%*	*Median(SD)*	*%*
Husbands	25.9(4.57)	15.69(2.38)	70%	26%	$20-25K($7.21K)	91%
Wives	24.21(3.59)	18.14(1.88)	56%	28%	$10-15K($5.41K)	93%

Table 2

Descriptive Statistics for Independent Variables

Variable	Mean	Standard Deviation
Husbands		
Imp. Attitudes	48.978	91.679
QMI	42.276	4.045
MPI	2.326	1.131
Demand	2.302	1.198
Withdraw	1.97	.989
Wives		
Imp. Attitudes	47.196	78.145
QMI	41.953	5.003
MPI	2.414	1.189
Demand	2.709	1.462
Withdraw	1.611	.713

Table 3

Intercorrelations of Variables

Variable	Demand	Withdraw	QMI	Imp. Attitudes	MPI
Demand	.462***	.242**	-.268**	-.106	.26**
Withdraw	.095	.316***	.003	-.07	.06
QMI	-.09	-.101	.174**	-.105	-.401***
Imp. Attitudes	-.011	-.033	.071	.131	.072
MPI	.018	.181**	-.332***	.024	.335***

*Notes:*** $p < .05$
*** $p < .001$
Husbands scores reported below the diagonal, wives scores reported above the diagonal, correlations between husbands and wives scores are on the diagonal

Table 4

Equation 1: Predicting Demand Behavior

	Coefficient	SE	T-Ratio	DF	P-value
Intercept	2.53	.125	20.26	219	<.001
Imp.	-.004	.002	-2.51	219	.014
QMI	-.056	.024	-2.29	219	.024
Sex	-.055	.149	-.37	219	.715
MPI	.065	.105	.62	219	.534
Partner	.651	.121	5.38	219	<.001
Imp.xQMI	.0006	.0005	1.03	219	.308
Imp.xSex	.003	.002	1.69	219	.095
Imp.xMPI	.002	.002	1.26	219	.21
Imp.xPartner	-.00004	.001	-.03	219	.977
QMIxSex	.102	.059	1.74	219	.086
QMIxMPI	-.029	.024	-1.21	219	.229
QMIxPartner	.0002	.027	.01	219	.994
SexxMPI	.128	.157	.81	219	.419
SexxPartner	-.143	.223	-.64	219	.522
MPIxPartner	.216	.128	1.69	219	.094
Imp.xQMIxSex	-.0007	.0007	-.95	219	.342
Imp.xQMIxMPI	-.00003	.0003	-.11	219	.912
Imp.xQMIxPartner	-.001	.0005	-1.27	219	.209
Imp.xSexxMPI	-.002	.002	-.75	219	.455
Imp.xSexxPartner	-.007	.003	-2.65	219	.01
Imp.xMPIxPartner	.002	.002	.83	219	.412
QMIxSexxMPI	.047	.036	1.33	219	.187
QMIxSexxPartner	.112	.086	1.29	219	.199
QMIxMPIxPartner	.062	.04	1.44	219	.155
SexxMPIxPartner	-.096	.241	-.41	219	.684
Imp.xQMIxSexxMPI	-.0001	.0005	-.25	219	.802
Imp.xQMIxSexxPartner	.002	.001	1.71	219	.09
Imp.xQMIxMPIxPartner	-.0002	.0004	-.41	219	.683
Imp.xSexxMPIxPartner	.00001	.001	.01	219	.992
QMIxSexxMPIxPartner	-.062	.061	-1.01	219	.315
Imp.xQMIxSexxMPIxPartner	-.001	.0001	-.68	219	.498

Table 5

Equation 2: Predicting Withdraw Behavior

	Coefficient	SE	T-Ratio	DF	P-value
Intercept	1.697	.088	19.2	219	<.001
Imp.	-.001	.001	-.62	219	.539
QMI	-.022	.021	-1.02	219	.311
Sex	.234	.106	2.22	219	.029
MPI	.068	.077	-.88	219	.383
Partner	.307	.07	4.36	219	<.001
Imp.xQMI	-.0001	.0003	-.38	219	.706
Imp.xSex	.002	.001	1.01	219	.314
Imp.xMPI	.0003	.001	.27	219	.79
Imp.xPartner	.001	.001	1.17	219	.244
QMIxSex	.026	.032	.81	219	.421
QMIxMPI	.002	.019	.09	219	.925
QMIxPartner	-.015	.022	-.70	219	.484
SexxMPI	.153	.109	1.41	219	.162
SexxPartner	-.055	.086	-.64	219	.522
MPIxPartner	-.037	.065	-.57	219	.57
Imp.xQMIxSex	-.0004	.0005	-.84	219	.401
Imp.xQMIxMPI	.00004	.0002	.17	219	.869
Imp.xQMIxPartner	-.0007	.0004	-1.48	219	.143
Imp.xSexxMPI	.0002	.002	.13	219	.9
Imp.xSexxPartner	-.002	.002	-1.63	219	.106
Imp.xMPIxPartner	-.0005	.001	-.4	219	.691
QMIxSexxMPI	-.011	.028	-.4	219	.691
QMIxSexxPartner	.013	.027	.47	219	.643
QMIxMPIxPartner	.027	.02	1.39	219	.168
SexxMPIxPartner	.084	.082	1.03	219	.306
Imp.xQMIxSexxMPI	.0002	.0004	.39	219	.697
Imp.xQMIxSexxPartner	.0005	.0005	.091	219	.368
Imp.xQMIxMPIxPartner	.00004	.0003	.14	219	.89
Imp.xSexxMPIxPartner	.0009	.001	.44	219	.641
QMIxSexxMPIxPartner	-.031	.022	-1.39	219	.168
Imp.xQMIxSexxMPIxPartner	.0003	.0004	.72	219	.474

Figure 1

Implicitly Assessed Attitudes and Partner Withdraw on Men's Demand

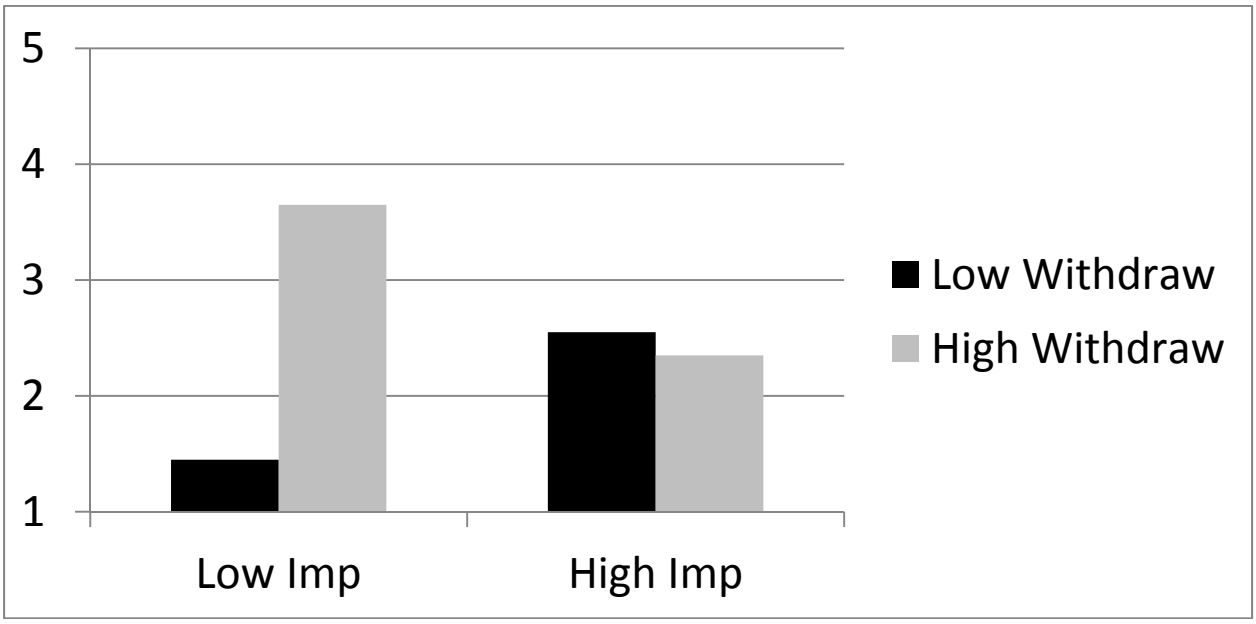
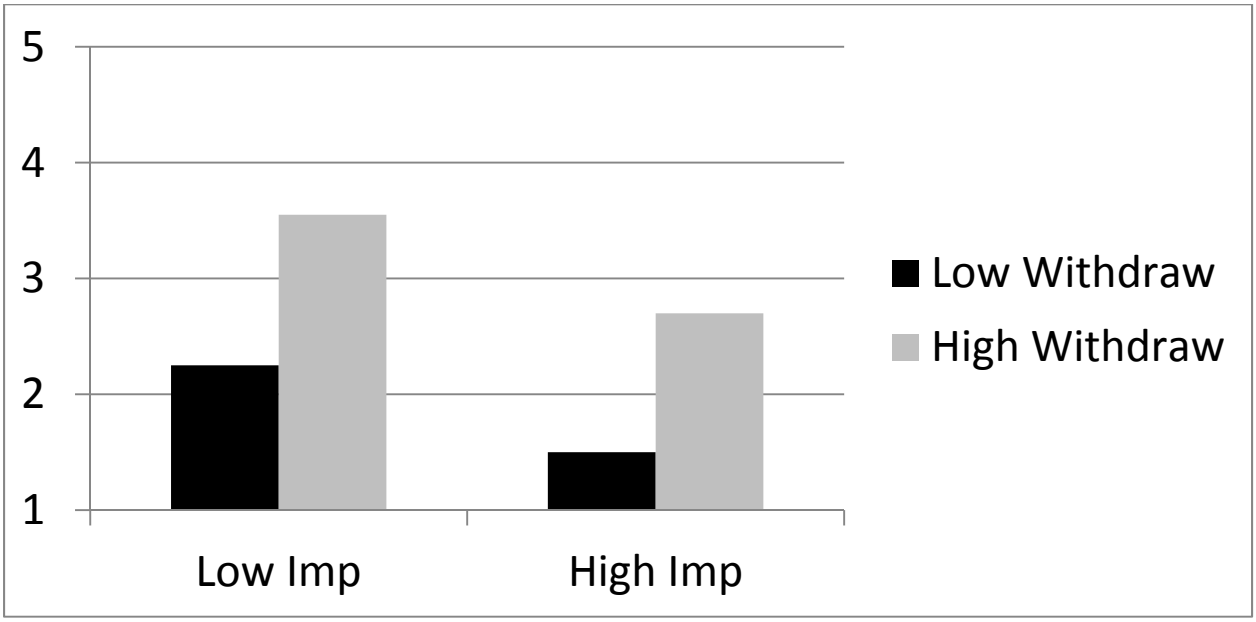


Figure 2

Implicitly Assessed Attitudes and Partner Withdraw on Women's Demand



Vita

Matthew Jason Shaffer was born in Greenwich, CT on May 4, 1987. At the age of four, his family moved to Scottsdale, AZ, and at the age of nine, his family moved to Annandale, NJ. Matthew graduated from North Hunterdon High School in 2005. In 2009, Matthew graduated from the University of Delaware with a Bachelor of Arts degree. He then moved to the University of Tennessee, Knoxville to pursue a Master of Arts degree in Experimental psychology with a concentration in Social Psychology. While in graduate school, he worked as a research assistant as well as a graduate teaching assistant, teaching Social Psychology at the university. His research interests include romantic relationships, interpersonal communication, and human sexuality. In August 2012, Matthew completed requirements for a Master of Arts degree in Experimental Psychology. Matthew plans on pursuing a doctoral degree in psychology with a concentration in Industrial/Applied psychology.